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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/373,926	08/12/1999	HO MING LUK	35006-577F01US	3102

76615 7590 05/12/2008

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EXAMINER	
MORGAN, ROBERT W	
ART UNIT	**PAPER NUMBER**
3626	

MAIL DATE	DELIVERY MODE
05/12/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/373,926	LUK ET AL.	
	Examiner	Art Unit	
	Robert W. Morgan	3626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 September 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-41 and 45-64* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-41 and 45-64* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/29/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Notice to Applicant

1. This communication is in response to the amendment filed 9/17/07, the following has occurred: Claims 2, 5-8, 14 and 58-61 are amended and claims 42-44 have been canceled. Now claims 1-41 and 45-64 are presented for examination.

Information Disclosure Statement

2. The information disclosure statement filed 7/29/02 has been acknowledged and entered.

Specification

3. The new abstract has been acknowledged and entered.

Claim Objections

4. The objection to claim 14 has been withdrawn by examiner based on the changes made by the Applicant to the claim.

Claim Rejections - 35 USC § 112

5. The rejections under 35 U.S.C. § 112, second paragraph have been withdrawn by examiner based on the changes made by the Applicant to the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-11, 17-41 and 49-52 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Gopinathan et al., Pat. No. 5,819,226 (hereinafter Gopinathan) in view of Fischthal, Patent No. 5,822,741) and Downs, Sean, "Technology, education aid medical fraud fighting" (hereinafter Downs).

Gopinathan discloses a method for detecting fraud employing predictive modeling techniques. .... Gopinathan discloses a model development component that uses past data to build a neural network containing information representing learned relationships among a number of variables (col. 4, lines 46-51). This is the derivation of variables from related information provided. Gopinathan further discloses that the derived variables are applied to the neural network and a fraud score (representing the likelihood of fraud for the transaction) is obtained and compared to a threshold value (col. 4, lines 31-42; col. 28, lines 3-5). This is the model score indicating the relative likelihood of misrepresented information.

Gopinathan further discloses a model development component that uses past data to build a neural network containing information representing learned relationships among a number of variables (col. 4, lines 46-51). The neural network model is trained using data describing past transactions from the data network, and then data describing the network model are stored (col. 4, lines 31-42). Once the model description is stored, the system is able to process current transactions.

Gopinathan also discloses a model development component that uses past data to build a neural network containing information representing learned relationships among a number of variables (col. 4, lines 46-51). The neural network model is trained using data describing past transactions from the data network, and then data describing the network model are stored (col. 4, lines 31-42). Once the model description is stored, the system is able to process current

transactions. The model then determines a fraud score and reason codes, which are output to the user, or to a database, or to another system via output device. Gopinathan further discloses a method of calculating the fraud rate score and then comparing this score to a threshold value (col. 28, lines 3-5). This threshold value is then used to determine if the transaction is approved.

Gopinathan does not explicitly disclose that the predictive model is employed in insurance transactions.

However, Fischthal discloses a neural network for detecting fraud in insurance transactions (col. 4, lines 62-66). The motivation to use such a neural network was to manage large amounts of data and to quickly and efficiently perform the difficult and tedious tasks that are required to be performed by human experts (see: Fischthal, col. 4, lines 17-25). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to include the neural network for detecting fraud in insurance transactions as disclosed by Fischthal within the neural network predictive model of Gopinathan for the motivation stated above.

Gopinathan does not explicitly disclose that the higher fraud score is used to increase insurance premiums.

However, Gopinathan discloses that the increased fraud score is used to characterize, classify, and order SIC Codes as well as to represent the likelihood of fraud for each transaction (col. 26, lines 60-64). Furthermore, Downs discloses paying the high cost of fraud in the form of increased premiums. The motivation for this is to compensate insurance carders for losses due to fraudulent claims (page 1, column one, paragraph 1). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to include that the higher fraud score is used to increase insurance premiums as disclosed by Downs within the Gopinathan and

Fischthal combination for the motivation stated above.

7. Claims 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gopinathan, Fischthal, and Downs as applied to claim 1 above, and further in view of Prezioso, Patent No. 5,724,488.

Gopinathan, Fischthal and Downs disclose the method of claim 1.

Gopinathan, Fischthal and Downs do not explicitly disclose determining a plurality of peer groups of which the selected policy is a member; and

• for each peer group, deriving variables from the policy which attribute characteristics of the peer group or set of peer groups to the selected policy or which compare the selected policy to other policies of the peer group.

However, Prezioso discloses a hierarchical ordering of categories with which to determine a quantity corresponding to a set of behaviors, that are entities, the entities being different indicators that fraudulent behavior is occurring (col. 8, lines 18-28, lines 50-59). The motivation for this is to determine a behavior profile comprising a large number of behavior characteristics for entities to be used to detect abnormal or dissimilar behavior (col. 2, lines 4-15 and lines 29-43). Prezioso further discloses identifying the behavior within a peer group that indicates that the target behavior is compatible with the peer group. It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to include determining a plurality of peer groups of which the selected policy is a member and for each peer group, deriving variables from the policy which attribute characteristics of the peer group or set of peer groups to the selected policy or which compare the selected policy to other policies of the peer group as disclosed by Prezioso within Gopinathan, Fischthal and Downs for the motivation

stated above.

8. Claims 45-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gopinathan in view of Prezioso.

Gopinathan discloses a method for detecting fraud employing predictive modeling techniques. Gopinathan discloses a model development component that uses past data to build a neural network containing information representing learned relationships among a number of variables (col. 4, lines 46-51).

Gopinathan does not explicitly disclose set of entities corresponding to a hierarchical ordering of categories.

Prezioso discloses a hierarchical ordering of categories with which to determine a quantity corresponding to a set of behaviors, which are entities, the entities being different indicators that fraudulent behavior is occurring (col. 8, lines 18-28, lines 50-59). The motivation for this is to determine a behavior profile comprising a large number of behavior characteristics for entities to be used to detect abnormal or dissimilar behavior (col. 2, lines 4-15 and lines 29-43). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to include a set of entities corresponding to a hierarchical ordering of categories as disclosed by Prezioso within Gopinathan for the motivation stated above.

8. Claims 53-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gopinathan in view of Fischthal, Downs, and Werstein Hann, Leslie, "High-Tech Sleuths" (hereinafter Hann).

Gopinathan discloses a method for detecting fraud employing predictive modeling techniques. Gopinathan discloses a model development component that uses past data to build a

neural network containing information representing learned relationships among a number of variables (col. 4, lines 46-51). This is the derivation of variables from related information provided. Gopinathan further discloses that the derived variables are applied to the neural network and a fraud score (representing the likelihood of fraud for the transaction) is obtained and compared to a threshold value (col. 4, lines 31-42; col. 28, lines 3-5). This is the model score indicating the relative likelihood of misrepresented information.

Gopinathan further discloses a model development component that uses past data to build a neural network containing information representing learned relationships among a number of variables (col. 4, lines 46-51). The neural network model is trained using data describing past transactions from the data network, and then data describing the network model are stored (col. 4, lines 31-42). Once the model description is stored, the system is able to process current transactions.

Gopinathan also discloses a model development component that uses past data to build a neural network containing information representing learned relationships among a number of variables (col. 4, lines 46-51). The neural network model is trained using data describing past transactions from the data network, and then data describing the network model are stored (col. 4, lines 31-42). Once the model description is stored; the system is able to process current transactions. The model then determines a fraud score and reason codes, which are output to the user, or to a database, or to another system via output device. Gopinathan further discloses a method of calculating the fraud rate score and then comparing this score to a threshold value (col. 28, lines 3-5). This threshold value is then used to determine if the transaction is approved.

Gopinathan does not explicitly disclose that the predictive model is employed in insurance transactions.

However, Fischthal discloses a neural network for detecting fraud in insurance transactions (col. 4, lines 62-66). The motivation to use such a neural network was to manage large amounts of data and to quickly and efficiently perform the difficult and tedious tasks that are required to be performed by human experts (see Fischthal, col. 4, lines 17-25). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to include the neural network for detecting fraud in insurance transactions as disclosed by Fischthal within the neural network predictive model of Gopinathan for the motivation stated above.

Gopinathan does not explicitly disclose that the higher fraud score is used to increase insurance premiums.

However, Gopinathan discloses that the increased fraud score is used to characterize, classify, and order SIC codes as well as to represent the likelihood of fraud for each transaction (col. 26, lines 60-64). Furthermore, Downs discloses paying the high cost of fraud in the form of increased premiums. The motivation for this is to compensate insurance carders for losses due to fraudulent claims (page 1, column one, paragraph 1). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to include that the higher fraud score is used to increase insurance premiums as disclosed by Downs within the Gopinathan and Fischthal combination for the motivation stated above, Gopinathan does not explicitly disclose defining an audit action for performing on policies which have a score exceeding a threshold value but not exceeding a next greater threshold value.

However, Hann discloses defining an audit action for performing on policies which have a score exceeding a threshold value but not exceeding a next greater threshold value (i.e. system alerts adjusters to claims that score 500 or more and claims that hit 800 are automatically referred to a special investigator) (page 2, column 3). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to include defining an audit action for performing on policies which have a score exceeding a threshold value but not exceeding a next greater threshold value as disclosed by Hann within the Gopinathan, Fischthal and Downs combination for the motivation of using a software tool that helps identify cases that are most likely to be fraudulent (page 2, column 3).

Response to Arguments

9. Applicant's arguments filed 9/17/07 have been fully considered but they are not persuasive. Applicant's arguments will be addressed hereinbelow in the order in which they appear in the response filed 9/17/07.

(A) In the remarks, Applicants argues in substance that (1) There is no analogy between assessing whether a credit cared transaction is fraudulent as taught by Gopinathan, and whether an insurance policy has been obtained fraudulently as described in the present invention; (2) Fischthal teaches away from claimed invention; (3) The claimed invention does not do any segmentation as taught by Fischthal; and (4) The Downs reference is concerned with fraud in health care claims, not the obtaining of lower premiums through misrepresentation.

(B) In response to the Applicant's arguments, (1) There is no analogy between assessing whether a credit cared transaction is fraudulent as taught by Gopinathan, and whether an insurance policy has been obtained fraudulently as described in the present invention. The

Examiner respectfully submitted that the Fischthal reference, and not Gopinathan and Downs, *per se*, that was relied upon for the specific teaching of a neural network for detecting fraud in insurance transactions (col. 4, lines 62-66). Gopinathan and Downs were relied on for teaching that the derived variables are applied to the neural network and a fraud score (representing the likelihood of fraud for the transaction) is obtained and compared to a threshold value (see: Gopinathan: col. 4, lines 31-42; col. 28, lines 3-5). Gopinathan and Downs further teach paying the high cost of fraud in the form of increased premiums (see: Downs: page 1, column one, paragraph 1). Thus, the proper combination of the applied references would be the incorporation of Fischthal's derived variables applied to the neural network to obtain a fraud score with system as taught by Gopinathan and Downs.

(C) In response to the Applicant's arguments, (2) Fischthal teaches away from claimed invention and. The Examiner respectfully submits that Fischthal discloses a neural network for detecting fraud in insurance transactions (col. 4, lines 62-66). Furthermore, it is respectfully submitted that if Applicant's were correct in his assertion which Examiner does not admit, it has been held that prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.,* 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

(D) In response to the Applicant's arguments, (3) The claimed invention does not do any segmentation as taught by Fischthal. The Examiner respectfully submits that Fischthal teaches a conceptual clustering step that processes a first set of input data to create a set of conceptually cohesive classes and for each class creating a separate neural network (see: column 5, lines 50-55). Furthermore, it is noted that the features upon which Applicant relies (i.e., "… the claimed

invention handles different groups more elegantly than Fischthal by creating variables that enable a policy to be handled correctly all ***within a single neural network***") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

(E) In response to the Applicant's arguments, (4) The Downs reference is concerned with fraud in health care claims, not the obtaining of lower premiums through misrepresentation. The Examiner respectfully submits Downs teaches insurance fraud may cost the insurance industry, in particular the health care, billions of dollar a year and tools to reduce these losses can have a tremendous financial impact on the profitability of the industry (see: page 1, column 2, paragraph 2). This suggests that tools are in place to detect fraud and will in turn allow the insurance industry as a whole to charge their customer lower premiums.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert W. Morgan whose telephone number is (571) 272-6773. The examiner can normally be reached on 8:30 a.m. - 5:00 p.m. Mon - Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Luke Gilligan can be reached on (571) 272-6770. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert Morgan/
Primary Examiner, Art Unit 3626